

1 IN THE UNITED STATES DISTRICT COURT
2 FOR THE WESTERN DISTRICT OF MICHIGAN

3
4 SIERRA CLUB, Civil Action No. 1:08-cv-1183
5 Plaintiff, Paul L. Maloney
6 vs. Chief U.S. District Judge
7 CITY OF HOLLAND, MICHIGAN and
8 HOLLAND BOARD OF PUBLIC WORKS,
9 Defendants.

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11
12 DEPONENT: DAVID G. KOSTER

13 DATE: Wednesday, October 20, 2010

14 TIME: 8:00 A.M.

15 LOCATION: Doubletree Hotel

16 650 East 24th Street

17 Holland, Michigan

18 REPORTER: Dawn M. Spaeth, CSR-1458
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<p style="text-align: right;">Page 4</p> <p>1 Holland, Michigan 2 October 20, 2010 3 ***** 4 DAVID G. KOSTER, 5 after having first been duly sworn by the Notary 6 Public to tell the truth, the whole truth and nothing 7 but the truth, testified as follows: 8 MR. BENDER: Good morning. We are here in 9 deposition in the case Sierra Club versus City of 10 Holland and Holland Board of Public Works, 11 08-cv-1183. My name is David Bender. I represent 12 the plaintiff, Sierra Club. The deponent is here and 13 defendants are represented by Mr. Karg. 14 EXAMINATION 15 BY MR. BENDER: 16 Q. To start, can you spell your name for the record, 17 sir? 18 A. David, D-a-v-i-d, Gerard, G-e-r-a-r-d, Koster, 19 K-o-s-t-e-r. 20 Q. Mr. Koster, you're here today pursuant to a Notice of 21 Deposition; is that correct? 22 A. Correct. 23 (Deposition Exhibit 9 marked.) 24 Q. (By Mr. Bender) Showing you what's marked as 25 Exhibit 9, have you seen that document before?</p>	<p style="text-align: right;">Page 6</p> <p>1 James De Young Power Plant and extra costs that it 2 believed it had incurred in the performance of that 3 work. 4 Q. Was the control system related to the turbine 5 generator? 6 A. The control system in part, yes. It's a control 7 system for the plant, for the James De Young Plant, 8 so it's for the entire plant. 9 Q. So it controls the boilers and the turbines? 10 A. Correct. 11 Q. And other devices inside the plant? 12 A. Correct. 13 Q. And was the Robinson case an employment matter? 14 A. Yes. 15 Q. And have you ever testified in court before? 16 A. No. 17 Q. Have you given any other testimony under oath other 18 than the two depositions? 19 A. No, not as directly administered oath, no. Unless 20 you count discovery responses and swearing to 21 discovery responses. 22 Q. Have you sworn to discovery responses in any cases 23 other than the current one and the two that you were 24 deposed in? 25 A. No.</p>
<p style="text-align: right;">Page 5</p> <p>1 A. Yes, I have. 2 Q. Is that the Notice of Deposition? 3 A. Yes, it is. 4 Q. Thank you. Sir, have you been deposed before? 5 A. Yes, I have. 6 Q. How many times? 7 A. Twice. 8 Q. In what cases were those? 9 A. There was a case between Westinghouse Corporation and 10 the City of Holland and the Board of Public Works, 11 and there was a case between MacArthur Robinson, a 12 former employee of the Holland Board of Public Works 13 and the City of Holland and its Board of Public 14 Works. 15 Q. How long ago were your depositions in each of those 16 cases? 17 A. The Robinson case was a year to two years ago, 18 somewhere in the last couple years. The Westinghouse 19 case was in the mid 1990s. 20 Q. And do you know, was Westinghouse the plaintiff in 21 the Westinghouse case? 22 A. Yes. 23 Q. Do you know what its claims were against Holland? 24 A. It was -- the claims were for payment for services 25 relating to installation of a control system at the</p>	<p style="text-align: right;">Page 7</p> <p>1 Q. So you understand that your testimony here today is 2 under oath the same as if it's in court? 3 A. Yes. 4 Q. Just some understanding going forward today. You 5 probably got the same directions in your prior 6 deposition. I'll try to wait for you to finish 7 before asking another question if you can try to wait 8 to finish my question before answering, mostly for 9 the benefit of the court reporter. She can only take 10 down one of us at a time. If you need breaks, just 11 let us know. I'd just ask that if there is a 12 question pending, you answer it before we take the 13 break, and if you need any clarification on any 14 questions, please let me know so you know what I'm 15 asking, I know what question you're answering. 16 A. Okay. 17 Q. You are currently employed by the Board of Public 18 Works, correct? 19 A. Correct. 20 Q. How long have you worked for the Board of Public 21 Works? 22 A. For approximately 18 years. 23 Q. So that would be since 1992; is that correct? 24 A. In a full-time status, that's correct. 25 Q. Did you work part time for the Board prior to that?</p>

4 (Pages 4 to 7)

<p style="text-align: right;">Page 120</p> <p>1 A. Correct.</p> <p>2 Q. Do you know the unit?</p> <p>3 A. No. I don't recall.</p> <p>4 Q. Do you know whether it was the De Young Plant?</p> <p>5 A. Yes.</p> <p>6 Q. Do you know whether it's occurred more than once?</p> <p>7 A. I don't recall.</p> <p>8 Q. To the best of your recollection, on at least one</p> <p>9 occasion you believe more than two superheater tubes</p> <p>10 had a portion of the tube replaced as a single</p> <p>11 project?</p> <p>12 A. Yes.</p> <p>13 Q. Are you aware at any boiler anywhere where any</p> <p>14 portion of each condenser tube was replaced as part</p> <p>15 of a single project?</p> <p>16 MR. KARG: Object to the form of the</p> <p>17 question.</p> <p>18 A. Including the entire tube?</p> <p>19 Q. (By Mr. Bender) Any portion from a small portion to</p> <p>20 the entire tube was replaced on each tube that</p> <p>21 comprises the condenser tubes.</p> <p>22 A. Yes.</p> <p>23 Q. When did that occur?</p> <p>24 A. I am aware of condenser tube replacements. I'm aware</p> <p>25 they took place at the De Young Plant. I'm</p>	<p style="text-align: right;">Page 122</p> <p>1 single tube, correct?</p> <p>2 A. I consider retubing to replace a tube. It's just the</p> <p>3 quantity involved. I think when you look at -- when</p> <p>4 you say replacing every tube, that would be retubing</p> <p>5 the entire condenser as opposed to retubing part of</p> <p>6 the condenser. They're still retubing, but --</p> <p>7 Q. There's thousands of tubes in a condenser, correct?</p> <p>8 A. Correct.</p> <p>9 Q. So you consider replacing one tube retubing that</p> <p>10 condenser?</p> <p>11 A. No, I'm not saying that. What I'm saying is, if</p> <p>12 you -- first of all, I don't think you'd ever do</p> <p>13 that, but two, if you had to retube a portion of it,</p> <p>14 you could consider that retubing a portion of the</p> <p>15 condenser. That's what I'm saying. It doesn't have</p> <p>16 to be the entire condenser to be called retubing.</p> <p>17 Q. The term retubing refers to replacing --</p> <p>18 A. Groups of tubes.</p> <p>19 Q. -- groups of tubes?</p> <p>20 A. That's what I'm referring to.</p> <p>21 Q. So you're aware of only three occasions on any unit</p> <p>22 anywhere where groups of tubes were replaced on a</p> <p>23 condenser?</p> <p>24 MR. KARG: Object to the form of the</p> <p>25 question.</p>
<p style="text-align: right;">Page 121</p> <p>1 specifically aware of Unit Number 5's replacement of</p> <p>2 condenser tubes.</p> <p>3 Q. Did that occur in the year 2000?</p> <p>4 A. Yes.</p> <p>5 Q. Other than that replacement, are you aware of any</p> <p>6 time when each tube in a condenser was replaced in</p> <p>7 any part?</p> <p>8 A. Yes, but not firsthand knowledge of it. I'm aware</p> <p>9 that it happened in the other two units at De Young,</p> <p>10 but I don't have firsthand knowledge of those jobs.</p> <p>11 Q. If I understand correctly, you're aware that each of</p> <p>12 the units at De Young had its condenser retubed,</p> <p>13 correct?</p> <p>14 A. Correct.</p> <p>15 Q. And by retube, we're talking about replacing the</p> <p>16 entire tube for each tube that's in the condenser?</p> <p>17 A. I can't say for sure whether that was each and every</p> <p>18 condenser tube, so.</p> <p>19 Q. Is it the majority of the condenser tubes?</p> <p>20 A. You know, I don't know really. Without having</p> <p>21 firsthand knowledge of that job, I couldn't</p> <p>22 speculate. I know retubing has happened in those</p> <p>23 units, but I couldn't speculate on the percentage or</p> <p>24 whether it's all of it.</p> <p>25 Q. Retubing means something different than replacing a</p>	<p style="text-align: right;">Page 123</p> <p>1 A. That's not true.</p> <p>2 Q. (By Mr. Bender) We talked about Units 3, 4, and 5</p> <p>3 where that's true, correct?</p> <p>4 A. Yes.</p> <p>5 Q. Other than the occurrences at 3, at 4, and at 5 where</p> <p>6 groups of condenser tubes were replaced, when else,</p> <p>7 to your knowledge, have groups of condenser tubes</p> <p>8 been replaced?</p> <p>9 MR. KARG: Object to the form of the</p> <p>10 question.</p> <p>11 A. I don't have the specific units and times, but I've</p> <p>12 read articles in journals and magazines in the trade</p> <p>13 that have indicated that various units have had, if</p> <p>14 not all, but potentially portions of their condensers</p> <p>15 retubed. So I'm aware that projects have happened in</p> <p>16 that regard, but I don't have the specific unit and</p> <p>17 time.</p> <p>18 Q. (By Mr. Bender) A few more questions, then we'll go</p> <p>19 to lunch and come back.</p> <p>20 A. Okay.</p> <p>21 Q. Are you aware of any time when -- let's back up and</p> <p>22 talk about the snow melt system in general. You're</p> <p>23 aware of the snow melt system on the De Young Plant,</p> <p>24 correct?</p> <p>25 A. Yes.</p>

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<p style="text-align: right;">Page 124</p> <p>1 Q. And do you know when that system was installed?</p> <p>2 A. Through records, I understand that it was installed</p> <p>3 around 1988.</p> <p>4 Q. Are you aware of any other generating units that have</p> <p>5 a snow melt system installed on them?</p> <p>6 MR. KARG: Object to the form of the</p> <p>7 question. Can you clarify what you mean by any other</p> <p>8 units?</p> <p>9 MR. BENDER: Same as before.</p> <p>10 A. I'm aware there's a number of units that use heat for</p> <p>11 other sources. I don't know whether or not they use</p> <p>12 them for melting snow, for other reasons for district</p> <p>13 heating. So when you call something a snow melt</p> <p>14 system, I think that's a fairly broad term and</p> <p>15 depends how it's being utilized, how you're getting</p> <p>16 heat from that unit to that system.</p> <p>17 So I'm aware that there are systems in</p> <p>18 place to use auxiliary heat for various heating</p> <p>19 purposes, but to say that there's another system like</p> <p>20 ours exactly, I don't know that.</p> <p>21 Q. You don't know of any?</p> <p>22 A. I don't know of any like ours exactly.</p> <p>23 Q. When you say axillary heat, you mean heat from the</p> <p>24 condenser unit?</p> <p>25 A. I mean waste heat from the condenser.</p>	<p style="text-align: right;">Page 126</p> <p>1 Q. And are you aware of any other facilities anywhere</p> <p>2 that use a dilution pipeline to dilute its</p> <p>3 circulating water?</p> <p>4 MR. KARG: Object to the form of the</p> <p>5 question.</p> <p>6 A. I'm not aware of any.</p> <p>7 MR. BENDER: Why don't we break for lunch.</p> <p>8 (Luncheon recess taken from 12:00 to</p> <p>9 1:00 p.m.)</p> <p>10 Q. (By Mr. Bender) Mr. Koster, coming back from break, a</p> <p>11 couple questions for you to follow up on discussion</p> <p>12 we had before we broke.</p> <p>13 You had noted earlier how you thought tube</p> <p>14 repairs and tube replacements were common in the</p> <p>15 industry. Do you recall that --</p> <p>16 A. Yes.</p> <p>17 Q. -- discussion we had? When you say that, do you</p> <p>18 include any repair or replacement of any portion of a</p> <p>19 tube that you believe is common?</p> <p>20 A. I believe that all types of tube replacement are</p> <p>21 common.</p> <p>22 Q. Do you think that replacing an entire tube is common?</p> <p>23 A. Yes.</p> <p>24 Q. Do you believe replacing numerous tubes in one</p> <p>25 project is common?</p>
<p style="text-align: right;">Page 125</p> <p>1 Q. Can you tell me where else waste heat from the</p> <p>2 condenser is used?</p> <p>3 A. I'm sorry, do you mean in Holland?</p> <p>4 Q. No, I mean anywhere. You said you're aware of other</p> <p>5 places where it's used. I'm asking what those are.</p> <p>6 A. I'm aware that something is being constructed at</p> <p>7 another municipality, but I don't know whether or not</p> <p>8 it uses the same sort of -- exactly the same sort of</p> <p>9 system or not. So I'm aware Grand Haven is</p> <p>10 considering something and I know that Lansing through</p> <p>11 some of their units provide heat to district heating</p> <p>12 zones within Lansing. So how they actually occur, I</p> <p>13 don't know, and that's why I said I don't know if any</p> <p>14 of these are exactly like Holland's.</p> <p>15 Q. So other than Grand Haven considering it and the fact</p> <p>16 that Lansing provides district heat, you're not aware</p> <p>17 of any other units that use heat from the condenser</p> <p>18 for any kind of heat system?</p> <p>19 MR. KARG: Object to the form of the</p> <p>20 question.</p> <p>21 A. Not that I'm aware of.</p> <p>22 Q. (By Mr. Bender) I'll also ask about the circulating</p> <p>23 water dilution pipeline for Units 4 and 5. You are</p> <p>24 aware of that pipeline?</p> <p>25 A. Yes.</p>	<p style="text-align: right;">Page 127</p> <p>1 A. Again, I think that what I indicated was routine, and</p> <p>2 based upon my understanding of the other projects</p> <p>3 that we're involved in and from the journals and</p> <p>4 magazines that I've read that have talked about</p> <p>5 various projects that have been undertaken, I believe</p> <p>6 that those sections would be routine as well.</p> <p>7 Q. What do you mean by routine?</p> <p>8 A. Common, I guess.</p> <p>9 Q. I ask because you made that distinction between</p> <p>10 common and routine.</p> <p>11 A. I guess, but what I said earlier was routine, but you</p> <p>12 saying common, then I think they are synonymous.</p> <p>13 Q. How often does something have to occur to be common?</p> <p>14 MR. KARG: Object to the form of the</p> <p>15 question.</p> <p>16 A. I don't know that I could answer that. I don't know</p> <p>17 that I would have -- I don't think it's a specific</p> <p>18 amount of times. More a matter of based upon my</p> <p>19 experience, these things have happened at the</p> <p>20 De Young Plant, they've happened at the other plants</p> <p>21 that we're involved in, and I regularly read of other</p> <p>22 projects. So due to the fact that you see that</p> <p>23 happening on a frequent basis, I consider that to</p> <p>24 determine routine, not that there's a threshold of a</p> <p>25 number of times or anything like that involved, but</p>

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<p style="text-align: right;">Page 176</p> <p>1 installed the boiler control system?</p> <p>2 A. I think there were periods of time where the unit was</p> <p>3 brought off to do some tuning potentially as a result</p> <p>4 of that, but as it related to the boiler controls,</p> <p>5 there wasn't a lot of problems with that.</p> <p>6 Q. You said there is a period of tuning and shakedown?</p> <p>7 A. Yes.</p> <p>8 Q. So that's what you mean, is a period of time where</p> <p>9 you adjust things, do other things?</p> <p>10 MR. KARG: Object to the form of the</p> <p>11 question.</p> <p>12 A. Yes. Mostly tune, check functionality, confirm</p> <p>13 functionality, but mostly tuning.</p> <p>14 Q. (By Mr. Bender) Then for the Low NOx burners, was it</p> <p>15 the same thing, you tune the burners after they're</p> <p>16 installed?</p> <p>17 A. Correct.</p> <p>18 Q. Do you have to tune other things other than the</p> <p>19 burners after they're installed?</p> <p>20 A. You're tuning the burners in relationship to the</p> <p>21 combustion of the boiler. So it's interrelated to</p> <p>22 your total air combustion tuning and your fuel feed</p> <p>23 and things like that. So, I mean, it's tuning the</p> <p>24 boiler while you're tuning the burner itself.</p> <p>25 Q. And new burners might need different amounts of air,</p>	<p style="text-align: right;">Page 178</p> <p>1 confirm and verify and tune if they weren't at spec.</p> <p>2 Q. You're aware of the project to install the</p> <p>3 circulating water dilution line; is that correct?</p> <p>4 A. Yes.</p> <p>5 Q. What's your understanding of the purpose for that</p> <p>6 project?</p> <p>7 A. My understanding of the project is to help to meet a</p> <p>8 temperature limitation at the outfall of the</p> <p>9 circulating water outfall for Units 4 and 5.</p> <p>10 Q. Were you involved in planning that dilution line</p> <p>11 project?</p> <p>12 A. No.</p> <p>13 Q. Who was involved in that project?</p> <p>14 A. Primarily Mike Radakovitz and Loren Howard.</p> <p>15 Q. Is your understanding of that project from those two</p> <p>16 individuals?</p> <p>17 A. Yes. Well, I shouldn't say that. I had a role in</p> <p>18 the project as well, but it was more to do with the</p> <p>19 electrical and instrumentation relative to a control</p> <p>20 valve within the line and some measurement of flow.</p> <p>21 Q. Is your understanding of the purpose of that project</p> <p>22 from Loren Howard and Mike Radakovitz?</p> <p>23 A. At the time that was my understanding, that's where I</p> <p>24 got my understanding of the project, yeah, was more</p> <p>25 from Loren Howard.</p>
<p style="text-align: right;">Page 177</p> <p>1 so you change some of the combustion air, louvers, or</p> <p>2 openings or flow?</p> <p>3 A. Other than the burner itself, there were no other</p> <p>4 changes.</p> <p>5 Q. You tune other things elsewhere around the boiler to</p> <p>6 match them to the new burners?</p> <p>7 A. It's more a matter of just tuning the boiler with the</p> <p>8 incorporation of the burner. So it's confirmation,</p> <p>9 really, that -- and then maybe some slight adjustment</p> <p>10 relative to the burner, but the burner has it own set</p> <p>11 of louvers for it that are tuned in the process.</p> <p>12 Q. I didn't know what you meant by adjust, tune the</p> <p>13 boiler with the burners. I don't understand what the</p> <p>14 distinction was between the two that you were</p> <p>15 drawing.</p> <p>16 A. Okay.</p> <p>17 Q. What other than the boiler is involved in the burner</p> <p>18 that needs to be tuned when you put the new burners</p> <p>19 in?</p> <p>20 A. The airflow to the pulverizers could be affected by</p> <p>21 the fact that you have differing airflow to the</p> <p>22 burner itself. So you may have to do some</p> <p>23 modifications to the control set points for that.</p> <p>24 The burner had some requirements as well for the</p> <p>25 airflow from the mill, so there were things to</p>	<p style="text-align: right;">Page 179</p> <p>1 Q. Do you have an additional understanding now?</p> <p>2 A. Well, having been responsible for the operation of</p> <p>3 the plant, I understand the purpose of the line,</p> <p>4 so -- but at the time, if you're talking about the</p> <p>5 project itself, my understanding for the reason for</p> <p>6 the project was from Loren Howard.</p> <p>7 Q. When is the line used in the operation of the plant?</p> <p>8 A. It's used primarily during the hottest time of the</p> <p>9 year when the lake temperature is at it warmest out</p> <p>10 front of the plant.</p> <p>11 Q. How many weeks per year is that?</p> <p>12 A. Oh, it varies. It's not all the time during those</p> <p>13 weeks either.</p> <p>14 Q. Is the decision to use that line manual? Does the</p> <p>15 valve open manually or is it automatic based on</p> <p>16 temperature settings?</p> <p>17 A. It's manual.</p> <p>18 Q. Who makes the decision whether to use that line?</p> <p>19 A. The operators in the control room.</p> <p>20 Q. And what basis do they use or what's the formula they</p> <p>21 use for whether or not to use the line?</p> <p>22 A. They're looking at whether or not the unit would be</p> <p>23 projected to exceed its 24-hour average limit for</p> <p>24 temperature threshold for that outfall.</p> <p>25 Q. Is there a numeric formula that they use?</p>

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<p style="text-align: right;">Page 180</p> <p>1 A. They have a spreadsheet that shows them at any time 2 during the day what they're projected to average 3 after 24 hours, and so they can utilize that as a 4 guide, but it's not -- there's no set formula 5 per se. 6 Q. So they watch the projection of 24-hour heat 7 discharge average and then make a decision whether or 8 not to open the dilution line? 9 A. No. They watch the average temperature for the day 10 and make a decision as to whether to open the valve. 11 Q. You don't know how many times per year the valve is 12 opened? 13 A. No. 14 Q. All right. Is that recorded anywhere? 15 A. I'm not sure. 16 Q. The dilution line takes part of the flow from the 17 circulating water line in from the lake, correct? 18 A. Yes. 19 Q. After the pumps? 20 A. After the pumps. 21 Q. When the line is open, does it decrease the amount of 22 circulating water that's flowing through the boiler 23 condenser? 24 A. Not necessarily. 25 Q. Can the pumps increase their volume when the valve is</p>	<p style="text-align: right;">Page 182</p> <p>1 Q. Why is that? 2 A. Because the temperature that Units 4 and 5 can 3 discharge to the snow melt system is not adequate for 4 the design criteria of the snow melt system. 5 Q. So why are they connected to the system then? 6 A. To keep it from freezing. 7 Q. So when 4 and 5 are operating and Unit 3 is not 8 operating, Units 4 and 5 are sufficient to keep the 9 system from freezing? 10 A. Yes. 11 Q. But they're not sufficient to keep the system 12 operating correctly? 13 A. Correct. 14 Q. Has that always been true? 15 A. True, yes. 16 Q. What's the minimum condenser temperature needed, 17 condenser water temperature needed on Unit 3 to run 18 the system? 19 A. The system is designed for 95-degree discharge water, 20 and that design criteria is based upon certain 21 ambient conditions out where the snow melt is taking 22 place. So based on that -- actually, I'm sorry, the 23 design criteria, that was 93 degrees Fahrenheit. So 24 that's for the conditions -- I don't remember the 25 exact conditions, but for a certain ambient</p>
<p style="text-align: right;">Page 181</p> <p>1 open? 2 A. There are four pumps in the control house, and we can 3 turn on an extra pump when the valve is open so that 4 the condensers do not see a drop in flow. 5 Q. It's true you only installed one dilution line at the 6 De Young Plant, correct? 7 A. That's correct. 8 Q. Let's talk briefly about the snow melt system. Do 9 you know when the snow melt system was installed? 10 MR. KARG: Objection, asked and answered. 11 A. From my understanding, it was approximately 1988. 12 Q. (By Mr. Bender) And is it your understanding it was 13 initially connected only to Unit 3? 14 A. That's my understanding. 15 Q. And is it your understanding that later Units 4 and 5 16 were connected to the snow melt system? 17 A. Yes. 18 Q. Is the snow melt system currently operated mainly off 19 of Unit 3? 20 A. Yes. 21 Q. Has it always been operated mainly off of Unit 3? 22 A. Always mainly, yes. 23 Q. Can it be operated solely off of Units 4 and 5? 24 A. Not in a manner that's going to be as effective as 25 Unit Number 3.</p>	<p style="text-align: right;">Page 183</p> <p>1 temperature and a certain wind speed expected and to 2 be able to melt snow, the 93-degree temperature was 3 used as a design criteria. 4 Q. Does the system work when the temperature is less 5 than 93 degrees? 6 A. It can struggle depending upon the atmospheric 7 conditions in existence. 8 Q. Does the boiler have to operate at a minimum load for 9 its condenser discharge water to be 93 degrees? 10 A. Certainly, yes. 11 Q. Do you know what that minimum load is? 12 A. No. 13 Q. If the boiler is not operating, the snow melt system 14 isn't going to work, correct? 15 A. Correct. 16 Q. What's the minimum sustainable load on Unit 3? 17 A. Around 4 megawatts. 18 Q. At 4 megawatts is the condenser producing a 19 sufficient amount and temperature of condenser 20 discharge water to run the snow melt system? 21 A. It depends on the atmospheric conditions. 22 Q. So the answer is sometimes? 23 A. Sometimes. 24 Q. And sometimes it's too cold out or there's some other 25 weather condition that would require Unit 3 to</p>

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<p style="text-align: right;">Page 184</p> <p>1 operate at a greater than 4 megawatts for the snow 2 melt system to work? 3 MR. KARG: Object to the form of the 4 question. 5 A. There could be some periods of time that it would 6 require a higher temperature than what 4 megawatts 7 may be able to deliver. 8 Q. (By Mr. Bender) Do you know what the condenser 9 discharge temperature is associated with four 10 megawatts? 11 A. I don't know exactly, no. 12 Q. Is there any kind of protocol for operating Unit 3 13 intended to ensure that the snow melt system operates 14 properly? 15 A. Can you clarify that question? There are procedures 16 on how to operate the snow melt system. 17 Q. Okay. 18 A. Is that what you're referring to? 19 Q. Sure. Do those procedures involve operation of 20 Unit 3? 21 A. It shows you more how to set up the system for 22 operation, what valving positions and things like 23 that. 24 Q. Are there any procedures for operation of 25 Boiler 3 to make sure that the snow melt system is</p>	<p style="text-align: right;">Page 186</p> <p>1 back into the incoming of the intake of the condenser 2 to raise the temperature up. So there are a number 3 of actions that they could take to try to influence 4 that. 5 Q. Is one of the actions increasing the load on Unit 4? 6 MR. KARG: Object to the form of the 7 question. I think you meant Unit 3. 8 MR. BENDER: I'd prefer the answer if I 9 said Unit 3. 10 Q. (By Mr. Bender) So is one of the actions increasing 11 the load on Unit 3? 12 A. Typically that is not something that's used. I'm not 13 going to say that a small change couldn't change it, 14 but typically the reaction is to work with the water 15 systems, is the normal reaction. 16 Q. All right. When you plan outages on Unit 3, do you 17 try to plan around the snow season? 18 A. Typically. 19 Q. And when you have an option of which units to 20 dispatch, do you dispatch 3 during the winter season? 21 A. Well, again, we talked about earlier that there's 22 dispatching that occurs on that unit. Yes, it does 23 dispatch. I don't know if I understand your question 24 completely. 25 Q. Well, let me ask this: The snow melt system is</p>
<p style="text-align: right;">Page 185</p> <p>1 operating? 2 A. I don't know of a specific protocol on boiler 3 operation in support of the snow melt system. 4 Q. Is there a general understanding among the operators 5 on how Boiler 3 needs to be operated in order to 6 operate the snow melt system? 7 MR. KARG: Object to the form of the 8 question. 9 A. There's an understanding about -- I mean, there's 10 feedback that you would have based upon the ambient 11 conditions as to whether or not enough heat is being 12 delivered or not, and the operators would know how to 13 react to that. So to that extent, yes. 14 Q. (By Mr. Bender) So insufficient heat is being 15 delivered, the operators would know how to react to 16 that? 17 A. Yes. 18 Q. And how would they react to that? 19 A. They may change the flow going into the snow melt 20 system through the pumps. They may change the valve 21 positions there to allow more flow to go down that 22 way. They may take effort in terms of changing the 23 flow through the condenser to raise the temperature 24 of the outgoing water. They may change the 25 recirculating loop that allows for more water to come</p>	<p style="text-align: right;">Page 187</p> <p>1 operated by the Board of Public Works, correct? 2 A. Yes. 3 Q. It's owned by the City though? 4 A. Portions are owned by the City, portions are owned by 5 the Board of Public Works. 6 Q. Is there a contract on how the Board of Public Works 7 is going to operate it for the City? 8 A. There's a thermal rate that the City pays. 9 Q. Like a utility rate? 10 A. It's a utility rate. 11 Q. Does that entitle the City to hot water during 12 certain months? 13 A. I guess your use of entitle. It's a rate that 14 indicates what they're going to pay for energy that's 15 delivered to them. 16 Q. Is the Board of Public Works required to deliver 17 thermal hot water energy to the City? 18 A. To the extent that we can do that as needed, yes. 19 Q. Are there periods during the winter when Unit 3 is 20 not needed for energy and the Board of Public Works 21 shuts the unit down and stops delivering hot water to 22 the snow melt system? 23 A. No. 24 Q. If sufficient energy is being provided to the 25 Board of Public Works by wholesale contracts and</p>

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<p style="text-align: right;">Page 188</p> <p>1 Campbell Unit 3 and Belle River and generation is not 2 required, does Unit 3 still operate in order to have 3 hot water for the snow melt system? 4 MR. KARG: Object to the form of the 5 question. 6 A. As needed. 7 Q. (By Mr. Bender) As what's needed? 8 A. As hot water is needed, yes. 9 Q. So even though it's not economic to operate Unit 3 10 for electrical energy, Unit 3 is still operated for 11 the thermal hot water energy for the snow melt 12 system? 13 A. There may be times that that happens over the period, 14 yes. 15 Q. Are there times when Unit 4 is shut down because its 16 energy is not needed but Unit 3 operates? 17 A. I don't recall if during those times whether that 18 happened. That may have happened. 19 Q. Similarly for 5, are there times when 5 is shut down 20 because its energy is not needed but Unit 3 is 21 operating? 22 A. Could have. I don't know exactly. 23 Q. Does the Board of Public Works have to pay any 24 penalty under its contract or rate structure to the 25 City if it decides to shut down Unit 3?</p>	<p style="text-align: right;">Page 190</p> <p>1 A. I think what I mentioned earlier was that the Board 2 approves an overall budget for all the expense items 3 and a specific budget for the things that are in the 4 delineated list that are under the capital account. 5 So your question about is all the approval of the 6 Board, the majority of the Board is needed to approve 7 that. 8 Q. I'm sorry, maybe it was unclear. Once the Board 9 approves a budget with a line item in it for a 10 project, is that project approved by the Board, or is 11 there a second approval process after the budget but 12 before the project is implemented? 13 A. It depends. 14 Q. Depends on what? 15 A. The Board is approving a budget which is setting 16 aside funds. There's separate approval requirements 17 underneath the purchasing policy in terms of 18 threshold of dollar value of a contract for services 19 or dollar value of a procurement of parts that 20 requires separate and distinct approval from the 21 Board from the original budget. 22 Q. So some projects above a dollar threshold require 23 budget approval and then a second approval by the 24 Board? 25 A. That's correct.</p>
<p style="text-align: right;">Page 189</p> <p>1 A. Not that I'm aware of. 2 Q. Part of your current job is to make presentations to 3 the Board of Public Works for approval of projects, 4 correct? 5 A. Correct. 6 Q. And was that also part of your prior job as power 7 resources director? 8 A. Yes. 9 Q. Was that also part of your job as the production 10 engineering supervisor? 11 A. No. 12 Q. How often as operations director do you make 13 presentations to the Board for approval of 14 maintenance projects? 15 A. Fairly frequent. A lot of times those things are 16 handled through consent and presentations aren't 17 made. There is written documentation, but standing 18 in front of a board is not as frequent, but having to 19 present that for approval is frequent. 20 Q. I assume the Board approves the annual budget; is 21 that right? 22 A. That's correct. 23 Q. And when maintenance projects are itemized in that 24 annual budget, is approval of the budget, all the 25 approval by the Board required for those projects?</p>	<p style="text-align: right;">Page 191</p> <p>1 Q. And some projects require budget approval but do not 2 require a second approval from the Board? 3 A. That's correct. 4 Q. Some projects are within a miscellaneous category in 5 the budget and require no itemized approval by the 6 Board at all; is that correct? 7 A. That's not the criteria. I mentioned the criteria is 8 cost, is really the only threshold there. Being in a 9 miscellaneous category is not a determinant factor. 10 Q. So if it's not itemized in the annual budget but the 11 project is below the dollar threshold for approval by 12 the Board, it can go forward without Board approval 13 at all; is that correct? 14 A. Yes. 15 Q. And there are maintenance projects that have not been 16 approved by the Board; is that correct? 17 A. Yes. 18 Q. Are there any maintenance projects that don't require 19 a supervisor approval? 20 A. Give me -- can you be more specific on that? I'm 21 trying to figure out, are you talking about a 22 supervisor of the person that's requiring it? 23 Q. Yes. 24 A. I can think of cases where an individual -- and 25 again, that person is likely to be a supervisor or</p>

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